

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method of winding a web around a core at a high speed, comprising the steps of:

winding the web to a given length around the core under a low tension, then progressively increasing the tension of the web at a gradual predetermined rate until reaching a high tension, and thereafter winding the web under a tension which is being reduced from the high tension,

wherein the progressively increasing of the tension at the gradual predetermined rate is done by increasing a winding speed of the web.

2. (previously presented): The method according to claim 1, wherein said given length to which the web is wound around the core under the low tension is longer if the core is longer and shorter if the core is shorter.

3. (previously presented): The method according to claim 1, wherein said given length to which the web is wound around the core under the low tension is set to a value up to 15 % of the length to which the web is to be wound.

4. (currently amended): A method of winding a web around a core at a high speed, comprising the steps of:

winding the web to a given length, which corresponds to the length of the core, around the core under a low tension, then gradually increasing the tension of the web to a high tension, and thereafter winding the web under a tension which is being reduced from the high tension,

wherein the gradually increasing of the tension is done by increasing a winding speed of the web.

5. (previously presented): The method according to claim 4, wherein said given length to which the web is wound around the core under the low tension is longer if the core is longer and shorter if the core is shorter.

6. (previously presented): The method according to claim 4, wherein said given length to which the web is wound around the core under the low tension is set to a value up to 15 % of the length to which the web is to be wound.

7-8. (canceled).

9. (currently amended): An apparatus for winding a web around a core at a high speed, comprising:

winding tension storing means for storing a winding tension corresponding to the length to which the web is wound around the core;

torque converting means for reading said winding tension from said winding tension storing means and converting the read winding tension into a winding torque; and

core rotation control means for controlling rotation of the core according to said winding torque;

said winding tension being set so as to wind the web to a given length around the core under a low tension, then progressively increase the tension of the web at a predetermined gradual rate until reaching a high tension, and thereafter wind the web under a tension which is being reduced from the high tension,

wherein a winding speed of the web is increased during a period that the tension of said web is progressively increased to said high tension.

10. (previously presented): The apparatus according to claim 9, including simultaneously winding a plurality of webs around respective cores, wherein said winding tension storage means comprises means for storing winding tensions of the respective webs, and said core rotation control means comprises means for independently controlling rotation of the cores respectively according to said winding torques corresponding to said winding tensions.

11. (currently amended): An apparatus for winding a web around a core at a high speed, comprising:

winding tension storing means for storing a winding tension corresponding to the length to which the web is wound around the core;

torque converting means for reading said winding tension from said winding tension storing means and converting the read winding tension into a winding torque; and

core rotation control means for controlling rotation of the core according to said winding torque;

said winding tension being set so as to wind the web to a given length, which corresponds to the length of the core, around the core under a low tension, then gradually increase the tension of the web to a high tension, and thereafter wind the web under a tension which is being reduced from the high tension,

wherein a winding speed of the web is increased during a period that the tension of said web is gradually increased to said high tension.

12. (previously presented): The apparatus according to claim 11, including simultaneously winding a plurality of webs around respective cores, wherein said winding tension storing means comprises means for storing winding tensions of the respective webs, and said core rotation control means comprises means for independently controlling rotation of the cores respectively according to said winding torques corresponding to said winding tensions.

13-21. (canceled).